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ABSTRACT

The Practice Audit Model, a direct outgrowth of the Pennsylvania Pharmacists' Professional Development Program, provides a systematic framework in which to assess occupational and professional practitioners' continuing education needs and develop programs to meet those needs. The ultimate objective of the Practice Audit Model is to assist professionals in their attempt to remain competent practitioners through a collaborative effort that uses the particular expertise of educators, professional association representatives, and continuing education professionals. This monograph describes the evolution of the Practice Audit Model in the course of the Pharmacists' Professional Development Program. The experience gained in the pharmacy project suggests that the model can be a useful device for continuing professional education. Its applicability to other professions will be determined during a five-year research program in which the practice audit model will be applied to six other professional groups. (KC)

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THE PRACTICE AUDIT MODEL

A Process for Continuing Professional Education Needs Assessment and Program Development

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The Continuing Professional Education Development Project is being conducted at The Pennsylvania State University by Planning Studies in Continuing Education in association with the Center for the Study for Higher Education. Major goals of the project are

- To establish collaborative relationships between the University and the professions in order to strengthen the development and implementation of continuing professional education programs
- To develop and implement practice-oriented continuing professional education programs through the application of the Practice Audit Model to six selected professions
- To develop models of the University/profession collaborative relationship for continuing professional education which can lead to its insitutionalization

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This monograph was written to document the process through which the Practice Audit Model was developed. Primary responsibility for its preparation was assumed by the staff of Planning Studies in Continuing Education at The Pennsylvania State University, of which Wayne Smutz, Carl Lindsay, and I are members. However, it would not have been possible without the collaboration of authors Samuel H. Kalman, director of education for the American Pharmaceutical Association; Robert G. Pietrusko, director of the Susquehanna Pharmaceutical Profile Center; and John J. Seaman, director of the Drug Information Center of the Philadelphia Veterans Administration Hospital.

A number of people contributed substantially to the Pennsylvania Pharmacists' Professional Development Project described here. The names of these individuals may be found in Appendix A.

Deserving of special recognition is Alexander D. Black, coordinator of the Coordinating Council for Continuing Education in Health Care Systems at The Pennsylvania State University. As program administrator for the continuing education programs that grew out of this project, he handled, and continues to handle, all facets of program presentation from promotion and arrangements with faculty members to conducting the telephone conference programs and documenting participants' attainment of pharmacy credits.

We also wish to recognize Smith Kline & French Laboratories, which provided direct support for the conduct of the assessment workshop.

Donna S. Queeney, Editor

Foreword

The Practice Audit Model, a direct outgrowth of the Pennsylvania Pharmacists' Professional Development Program, provides a systematic framework in which to assess occupational and professional practitioners' continuing education needs and develop programs to meet those needs.

The involvement of The Pennsylvania State University in this program had its origins in the University's long-term commitment to continuing professional education. From the turn of the century, when Penn State first offered drafting courses by correspondence, career education has been recognized as one of the major focuses of the University's extensive Continuing Education program.

As the importance of a more systematic approach to continuing professional education became apparent, Planning Studies in Continuing Education was formed in 1963. The primary mission of this applied research unit is the conduct of needs assessment studies to identify areas for meaningful continuing education program development.

In January, 1976, in anticipation of a growing national emphasis on continuing professional education, a Committee on Continuing Professional and Occupational Education was formed at Penn State. This group examined national trends in continuing professional education, assessed the current state of Penn State's efforts in this area, and made recommendations for the long-term direction of the University in continuing professional education. One of the recommendations included in the Committee's 1977 report was that the University establish collaborative relationships with other institutions of higher education, professional schools, and professional associations.

It was in this context that The Pennsylvania State University joined the four schools of pharmacy in Pennsylvania to form an informal consortium in 1977 to develop and deliver continuing education for pharmacists throughout the State. From this consortium came the Pennsylvania Pharmacists' Professional Development Program.

The monograph that follows describes the evolution of the Practice Audit Model in the course of the Pennsylvania Pharmacists' Professional Development Program. This material should be viewed as one step in an ongoing process; as work with the Practice Audit Model continues, it will be applied to other professions and occupations. In fact, the next phase is already well underway, with a five-year project supported jointly by the W. K. Kellogg Foundation and The Pennsylvania State University in which the Practice Audit Model will be used with six other professional groups.

Floyd B. Fischer
Professor of Education Emeritus and
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University Park, Pennsylvania
March, 1981

Table of Contents

Foreword ii

Table of Contents iv

Introduction 1

Conceptual Foundations of the Practice Audit Model 4

Emergence of the Practice Audit Model 14

Initial Efforts: The Williamsport Model 14

Organizing for Action 18

Preparing for Assessment: Defining Professional Responsibilities 22

Designing Assessment Tools 25

The Assessment Process 29

Results of the Assessment Workshop 33

Program Development 35

Implementation 40

Summary of the Practice Audit Model 43

Conclusions and Future Directions 48

Appendix A: List of Project Team Members and Others Contributing to the Pennsylvania Pharmacists' Professional Development Program 52

Bibliography 56

Introduction

The current emphasis on the need for educational relevancy, coupled with growing concern about professional and occupational practitioners' ability to perform satisfactorily, reinforces the notion that continuing professional education must be directly related to the maintenance of competence in practice. In the past, the competence of practitioners was "assured" by selecting intellectually capable students, educating and training them in the pertinent areas of the curriculum for a particular profession or occupation, examining them, and if they "passed," authorizing them to practice. The belief today, however, is that the entry level educational process and a single test of competence at the beginning of the practitioner's career are not enough to ensure competence throughout that career.

The Practice Audit Model strives to address the issue of providing practice-oriented continuing professional education for competency maintenance. It grew out of a project to assess Pennsylvania pharmacists' level of competency so that they might be offered relevant continuing education programs. In the past, the majority of decisions about the continuing education needs of practitioners was based on surveys which asked respondents to select from a list of topics those which they felt best fitted their educational needs. In some instances, needs were determined by faculty members who felt they knew what practitioners needed to know. These procedures often resulted in educational offerings which were irrelevant to most practitioners.

The Practice Audit Model involves identifying what people do in practice, and addresses the practitioner's ability to use knowledge and skills in dealing with the complexity of everyday situations. In order

to obtain a consensus about what should be done, therefore, the audit procedure requires that pertinent measures for comparison be available. This requirement may necessitate that the selected professional or occupational group go through a role delineation process to establish firmly the basic functions of its practitioners. Clearly, unless there is an understanding and agreement about what the practitioners do, there will be no foundation on which to proceed with practitioner assessment.

Once measures to compare "performance" with suggested acceptable practice are available, the next step is to identify items for inclusion in the assessment procedure. This is accomplished by bringing together knowledgeable practitioners to work with the educational specialists to construct the assessment instrument. It is important to point out that although practitioner assessment deals with real situations, there is no intent to foster a set of rigid guidelines for the practitioner to follow; the assessment procedure is not prescriptive.

Once the assessment is conducted and deficits are identified, they may be used in one of two ways. The deficits may be aggregated in a manner which assures the confidentiality of individual results, and the data used as the basis for making decisions about educational offerings which should be made available to the larger group of practitioners who may have similar needs for updating in the areas identified. Or the individual, through appropriate feedback and with some guidance, may take charge of his own learning and plan a course of activities (based on his knowledge of available resources) to update himself. In either case, the resulting learning will be more relevant to actual practice needs of the individual. The Practice Audit Model potentially represents a systematic way of addressing continuing professional

education needs assessment and program development. Some of the Model's key elements, such as those noted above, were first developed and tried in a project to provide continuing education programs for Pennsylvania pharmacists. Exactly how the notions, the pharmacy project, and the Model evolved are the subject of this monograph.

Conceptual Foundations of the Practice Audit Model

The Practice Audit Model evolved from an effort to develop quality continuing professional education programs for pharmacists. When this effort began, no well defined blueprint for action existed. Rather, it was only after several years of discussion and interaction among practicing pharmacists, pharmacy faculty, professional association representatives, and continuing education professionals that a model emerged. This does not mean that the effort was an uninformed one; several key concepts provided the initial basis for the pharmacist project while others were added and integrated as it unfolded. Included among these concepts were competency, professionals' practice-oriented needs, role delineation, practice standards, educational needs assessment, collaboration, and systematic program development. These fundamental ideas and concepts were crucial contributions to the final product, the Practice Audit Model, and therefore warrant attention at the outset.

For a variety of reasons, continuing professional education has been the subject of considerable interest and debate in recent years. From a positive perspective, there is the conviction that continuing professional education can improve the quality of practice and help professionals continually maintain a fresh and current outlook on their work. Despite this belief, criticisms of continuing professional education as it has existed have been abundant. Critics point out that no relationship between continuing education and improved practice has been convincingly demonstrated. They also argue that programs delivered

to the field rarely are integrated into a coherent sequence, and that educators who develop programs possess little understanding of the problems professionals face in their day-to-day practice.

At the same time, professionals increasingly are being subjected to a rising tide of criticism. The consumer and anti-authority movements of recent years did not leave the professions unscathed (Olesen, 1979). Not only have they been chastised for exorbitant fees, but they also have been accused of incompetence (Olesen, 1979). No longer is the public passively assuming professional competence. Instead, people are demanding that professionals be held accountable for their actions (Kalman, 1979). Whether or not professional competency actually has declined, the public perception cannot conveniently be dismissed.

The problems of developing and delivering relevant, high quality continuing professional education programs and that of ensuring professional competence are closely related. They can be addressed simultaneously, but the effort must be a long term, systematic one that focuses on professionals' practice-oriented needs. It must be long term because competence is not achieved for all time (Olesen, 1979; Wilson, 1977a; Rosenfeld and Thornton, 1978). It must be systematic because education, competence, and assessment are intimately interrelated and can be addressed most efficiently and effectively within the same context (Menges, 1975). And it must focus on practice because it is for their acts that professionals will be held accountable. Given the above, what are the key ingredients required to provide adequate continuing professional education programming? It is to these issues that we now turn.

Competence in practice is the idea on which the development of

continuing professional education must rest. Competence is a multi-faceted concept. As Dubin (1972, 1974) observed, the delivery of competent services depends upon several factors, including organizational environment, availability of appropriate equipment, and a qualified professional. Granted that all these elements are important, the primary contributor to competent services is the individual professional practitioner (Wilson, 1977a). Without a competent practitioner, the other factors are irrelevant.

Once the focus is on the individual practitioner, what does competence mean for him? Competence really consists of two ingredients: Thornton and Rosenfeld argue that the individual must possess the requisite knowledge, abilities, and skills, AND must be able to apply those to the particular problems faced in practice (Rosenfeld and Thornton, 1978). While this appears to be a direct approach, a recent wave of criticism suggests that half of the equation is being ignored by those who prepare workers and professionals, as well as by those who are responsible for helping them maintain their competence. Specifically, the argument is that competence ultimately rests on performance or outcome (Pottinger, 1979, 1980). It is action oriented and must be judged by what the professional can do. Certainly knowledge and skills are prerequisites for appropriate action, but they are not substitutes for it. Furthermore, the latter cannot be inferred from the former, although many people believe that this inference has been made repeatedly. To avoid the trap of equating the possession of knowledge and skills with competence (Riesman, 1979; Pottinger, 1980; Klemp, 1979), attention must be given to relating learning and assessment processes to the practice setting more closely, and to the factors that

contribute to adequate performance (Houle, 1980).

The concern with developing continuing professional education programs to assist professionals in remaining competent dictates a determination of their practice-related educational needs. This too seems like a simple, direct approach to the competency issue. A need is the gap that exists between actual or current circumstances (practice) and satisfactory or desired circumstances (Scriven and Roth, 1978; Pennington, 1980). Needs assessments are intended to be systematic ways of identifying deficiencies or discrepancies that inhibit, in the case of professional practice, competent performance (Witkin, 1976). A number of needs assessment techniques have been developed, including the use of self-perceived needs surveys, objective tests of knowledge, and expert panels (Pennington, 1980; Dubin, 1972). However, criticisms of these techniques include the arguments that self-perception surveys can result in the identification of practitioner "wants" rather than what is needed for adequate performance, that objective tests of knowledge often ignore the actual problem of how knowledge is applied, and that expert panels rely too heavily on "arm chair theory" rather than empirical data (Pottinger, 1980).

As the foregoing discussion illustrates, competence and needs assessment are intertwined intimately. A competent practicing professional is the desired end, and needs assessments are the means to identify the help that should be provided to assist professionals in maintaining competence. Both require an understanding of what is demanded of a professional in his practice: to assess competence, a knowledge of the professional's roles and practices is necessary (Kalman, 1979a; Menges, 1975), and to determine needs, criteria against

which to judge performance must exist. The provision of relevant and quality continuing professional education thus must rest on knowledge of the attributes of the practitioner's responsibilities and tasks. While providers of continuing professional education certainly have not totally ignored this issue, it has not received the systematic attention it warrants. It is for this reason, at least in part, that continuing professional education has been criticized.

The systematic determination of professionals' responsibilities and tasks is the basis from which needs assessment, competency, and continuing education programs all must emerge. This notion of systematic determination, which can be accomplished by several methods, cannot be overemphasized. Role delineation and job analysis studies focus on the job by attempting to identify precisely the various responsibilities, tasks, and behaviors that comprise it (Wilson, 1977a). A slightly different method developed by McBer and Co., "Job Competence Assessment," focuses on the performer in a particular job and entails identifying the configuration of abilities, skills, and traits that distinguish the superior from the average performer (McClelland and Boyatzis, 1980; Klemp and Spencer, 1980). A variety of techniques can be used with each of these methods, including interviews with practitioners, direct observation, expert panels, job diaries, open-ended questionnaires, behavior event analysis, and survey checklists of responsibilities (Pottinger, 1979). Various schools of thought have emerged around these different methods and techniques, each arguing that theirs is best, but a clear consensus exists on one point: the determination of professionals' roles and practices must be empirically derived rather than simply defined by "experts" who do not venture into

the field to collect data.

Given the importance of role delineation studies for the development of quality continuing professional education programs, the major issue for those attempting to develop programs is that such a study be done. This is not to detract from the value of the continuing research and debate over the best way to perform these studies. Rather, it is to emphasize that the determination of what is required of the practicing professional, regardless of which empirical method is used, must be the paramount concern. Only when that is done is it possible to set standards of practice.

Outlines of responsibilities and tasks delineate what the professional does. This is not enough, however, if competency is the ultimate goal; criteria defining how well the task and responsibilities must be performed also are needed. These are standards of practice, which address such matters as the frequency, accuracy, and timeliness with which each task and responsibility must be accomplished by the professional (Rosenfeld and Thornton, 1978). In the final analysis, it is these standards that define competency for a profession (Rosenfeld and Thornton, 1978). Together with the outline of responsibilities, practice standards provide a common definition and understanding of the demands placed on the practicing professional. Without them, there is no adequate way to assess competence (Kalman and Schlegel, 1978).

Efforts to help professionals maintain their competence rest first on being able to define it. Beyond that, however, the systematic development of relevant continuing professional education programs requires a determination of practitioners' competence. Systematic is again the key word, for assessment procedures cannot be divorced from

the elements already in place. The major consideration, given the acknowledged standards, must be to identify deficiencies in practice. Much criticism has been leveled at assessment procedures that have been used because they have not addressed this point. Primarily, it is believed that practitioners have been assessed in a manner that does not address how the individual functions in actual practice. Many assessment procedures simply ask professionals to recall information rather than apply it (Pottinger, 1979), and practitioners being tested often are compared with their peers rather than with established standards (Wilson, 1977a, 1977b). Techniques to overcome these problems gradually are becoming available. Thus, criterion referenced tests and examinations that allow those being tested to construct a response rather than select from a limited response set are receiving increased attention (McClelland, 1973; Wilson, 1977a; McClelland and Boyatzis, 1980; Klemp, 1979). In addition, such devices as linear and branching simulation models (Pottinger, 1980; Anderson, 1980), patient-management problems, assessment centers (Howard, 1974; Slevin, 1972), and in-basket exercises (King, 1979) all attempt to assess the professional under practice-like conditions.

Assessment procedures that can identify deficiencies in practice set the stage for the development of relevant, quality continuing professional education programs. Once problem areas have been located, it becomes possible to construct programs that address the practicing professional's needs. Continuing professional education programs no longer must be developed randomly, but can be assembled as a coherent approach to practitioners' problems. The development of programs is not a simple task, of course, but the assurance that they are at least

focused on relevant issues is a major step that can lend credibility to the effort.

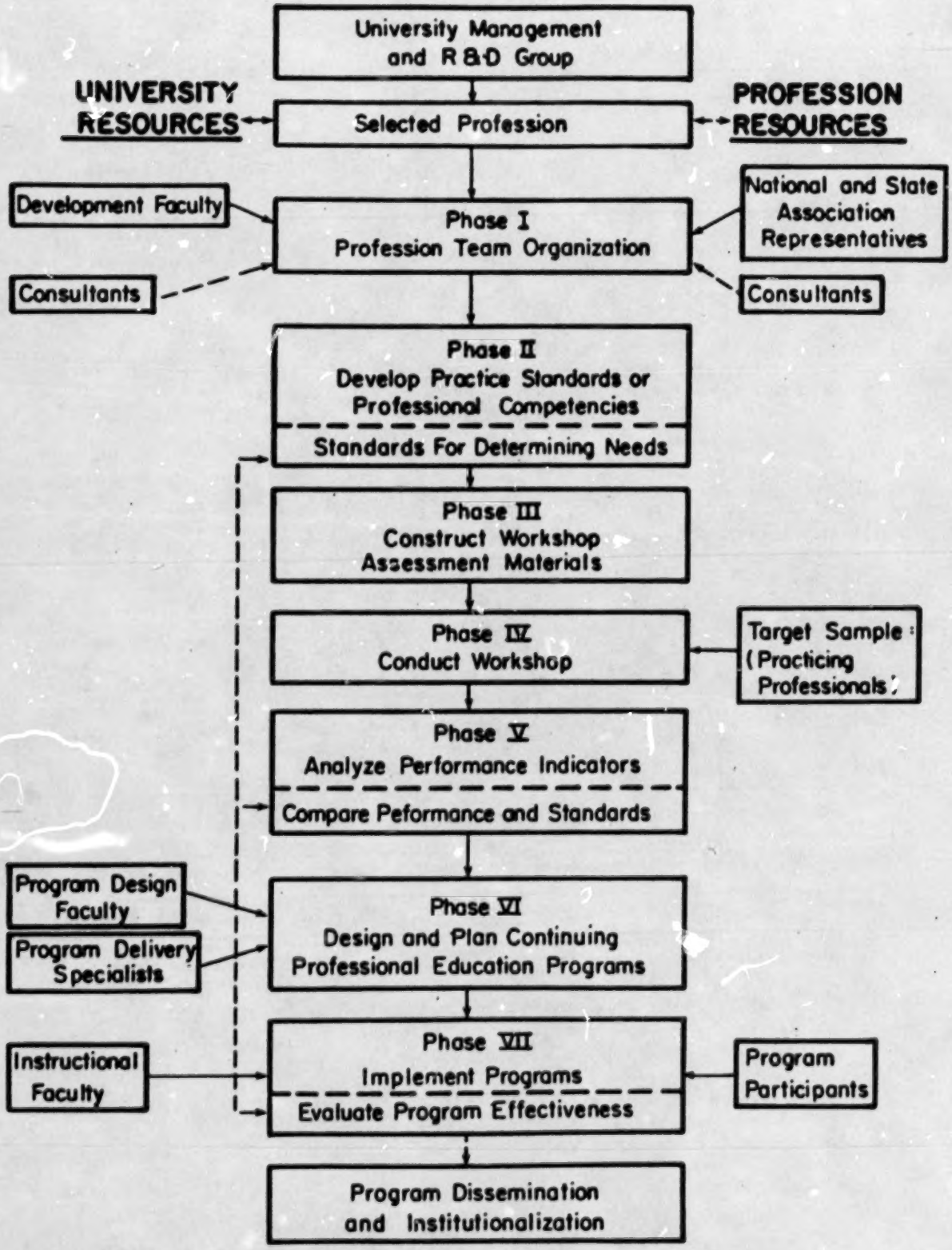
The attempt to systematically address the practice needs of professionals is not an easy one. The above discussion of the various elements involved indicates that it is an arduous task requiring numerous interests, skills, knowledge, and abilities, as well as long term commitment. It is for this reason that the final, useful element is collaboration (Lindsay and Toombs, 1980). For too long, many of the groups concerned with helping professionals maintain their competence have worked independently. The barriers erected between professionals and educators have been particularly detrimental (Olesen, 1979). Given the complexity of the task, various types of expertise are needed. Continuing education professionals are experienced in the delivery of programs, university faculty members work on the frontiers of knowledge and are experienced in program development, and professional associations are in the closest touch with the practicing professionals' concerns. Because each has something valuable to contribute, working together in collaboration they can produce a better product than they can separately.

The purpose of the Practice Audit Model is to provide for the systematic development of continuing professional education programs that will assist professionals striving to remain competent. The foregoing discussion has identified some of the key concepts that influenced the model's development. When these are placed within the model framework, the result is a seven-phase process as shown in Figure 1.

The remainder of this monograph details the process through which

the model evolved. What follows will not only illustrate how each phase of the model was operationalized with the pharmacy profession, but should provide insights into the working process from which the model evolved.

Figure 1



Practice Audit Model

Emergence of the Practice Audit Model

Initial Efforts: The Williamsport Model

The provision of continuing professional education often is closely related to developments in the professions. It is not unimportant, then, that the early 1970s were years when a number of changes were occurring in the pharmacy profession. One of the most important was a basic shift in practice from a product orientation to a focus on patient care. Characteristic of this shift was the establishment of a new educational degree, the Doctor of Pharmacy, and a corresponding new professional role, the clinical pharmacist. Contributing as well to this unsettled situation in the profession were a number of significant advances in the provision of products and services, a substantial increase in the amount of pertinent new drug related information available, and discussions about the possible imposition of mandatory continuing education by the state licensing board or by third party payers of services.

Pharmacy staff members at The Williamsport Hospital were aware of these developments. Because they were concerned with operating a modern, up-to-date facility, in 1972 they began to expand their services. Not only were new techniques and an out-patient pharmacy added, but a clinical pharmacist was appointed to consult and work with physicians, local pharmacists, and other health care providers to make available the best possible information concerning drug therapy. To complement this new array of services, a regional drug information center was established at the Hospital in 1974.

By 1973-74, the developments within the pharmacy profession and

those at The Williamsport Hospital had combined to emphasize that many of the practicing pharmacists in rural, north central Pennsylvania were in need of professional upgrading. Certainly the shift from drug dispensing to patient care functions suggested that some pharmacists would be deficient. This problem became reality when The Williamsport Hospital's clinical pharmacist and personnel at the regional drug information center began to have substantial contact with area pharmacists. Their experiences revealed that local pharmacists were unable to use the consultation services effectively because they could not fully understand the information being provided. As a consequence, pharmacists were not giving their clients, patients, and other health care professionals appropriate service.

Pharmacy staff members at The Williamsport Hospital quickly recognized the need for continuing professional education. It was clear that this would not be an easy problem to address, however. Continuing education programs for pharmacists were available in the State, but were offered predominantly in Philadelphia and Pittsburgh where the pharmacy schools were located. Participation in such programs by rural and small town pharmacists, who most often were engaged in solo practice, would be difficult if not impossible. Even if the logistical problems could be overcome, pharmacy staff members were not convinced that currently available programs were suitable. From their point of view, many of the programs offered lacked continuity as well as adequate coverage of important topical areas.

In 1973-74, the aforementioned changes in the pharmacy profession, developments at The Williamsport Hospital, emerging continuing education needs of local pharmacists, and the unavailability of adequate

continuing education programs led pharmacy staff members at The Williamsport Hospital to contemplate a pharmacy continuing education program to help local practitioners. Over the ensuing months, it was agreed that several key elements would have to be built into the plan. First, in order to avoid the fragmented approach often representative of continuing education in the past, any program should systematically cover a given subject rather than touch on numerous unrelated topics. Second, programs should be offered within easy commuting distance for local pharmacists. Third, Penn State's Continuing Education operation should be asked to assume responsibility for delivering any program because it had a telephone tie-line system in operation at numerous hospitals in the area. Fourth, pharmacists should be supplied with reading material before attending a program so that they might become familiar with the key concepts and gain a common base of understanding. Fifth, programs should have a discussion component to facilitate interaction among pharmacists, who often spend their professional lives in isolation. Finally, each program participant should receive some form of acknowledgement of his efforts (e.g., a certificate). Taken together, these elements were labeled the "Williamsport Model" (Ditchfield, Pietrusko, and Ross, 1976).

As the model unfolded through 1974 and 1975, the Williamsport pharmacy staff began to make contacts with those who would assist in the operationalization of the continuing education plan. The first contact was with Continuing Education personnel at Penn State, who agreed to assist in the delivery of programs by making their telephone tie-line system and administrative services available if one major obstacle could be overcome. Continuing Education at Penn State has no academic base of

its own, but relies upon the University's eleven colleges to provide the academic component of any program. However, since Penn State has no school of pharmacy, another academic base would have to be found if Penn State were to participate. Given that caveat, the Williamsport pharmacists turned to the Council of Pharmacy, a body representing the four pharmacy schools in the state, the Pennsylvania Pharmaceutical Association, and the Pennsylvania Society of Hospital Pharmacists. The Council agreed to cooperate because of its interest in upgrading professional practice. As a result, the four pharmacy schools assumed responsibility for continuing education program content and Penn State agreed to deliver the programs.

Development of the first pharmacy program based on the "Williamsport Model" occurred throughout the latter half of 1975 and the beginning of 1976. Finally, on March 24, 1976, a continuing education program on hypertension was offered. Shortly thereafter, on March 29, the major participants in the first program met to decide on the next steps. All agreed that the initial program was successful and that the "Williamsport Model" in operation had potential for further development. Consequently, the meeting ended with participants agreeing to consider expansion of the effort to other regions of the State, to possibly join in an informal consortium to further promote the effort, and to sponsor some form of needs assessment survey to determine future continuing education program content. While the project clearly had been years in developing, it seemed that the "Williamsport Model" was indeed going to produce fruitful results.

Organizing for Action

By mid-1976, the initiative, concerns, and efforts of The Williamsport Hospital pharmacy staff had fostered an increased sensitivity to the need for improved continuing professional education programs for the pharmacists of rural, central Pennsylvania. It planted the notion that a coordinated and coherent series of continuing education programs (a professional development plan) must replace the fragmented efforts of the past. It also generated interest in the project among several other groups whose contributions were necessary to achieve success. Included were:

1. representatives of Pennsylvania's four pharmacy schools--University of Pittsburgh, Temple University, Duquesne University, and Philadelphia College of Pharmacy and Science--who could develop programs.

2. officers of the Pennsylvania Pharmacy Association (PPA), who could provide the necessary contacts with practicing pharmacists and publicity for the program.

3. Continuing Education staff members from The Pennsylvania State University, who were experienced in coordinating and delivering continuing education programs to participants across the State.

To solidify this emerging collaborative effort, the groups joined in an informal consortium. As a result, most of the elements necessary to develop and deliver coordinated continuing education programs to pharmacists seemed to be in place.

One issue that remained to be resolved was the formal identification of pharmacists' continuing education needs. To address

this matter Planning Studies in Continuing Education at Penn State was brought into the project. The directive to this applied research unit was to develop an appropriate needs assessment instrument for distribution to practicing pharmacists. Planning Studies staff members proceeded with this task during the first months of 1977 by soliciting advice from knowledgeable persons regarding program topics appropriate for inclusion in a self-perceived needs assessment survey for pharmacists. Those contacted included representatives from community, hospital, and chain pharmacies, and from industry. In addition, the director of education for the American Pharmaceutical Association (APhA) was consulted. It was this latter contact that unexpectedly halted the needs assessment plan in motion and led to a rethinking of how continuing professional education for pharmacists should be addressed.

APhA's position was that the Williamsport model had considerable merit. The notion of providing a long-term coherent series of programs was a substantial improvement over the uncoordinated continuing education efforts of the past. There was a concern, however, with the way in which the pharmacists' needs would be determined. Self-perceived needs assessment surveys had been tried before without beneficial results. According to APhA, pharmacists needed continuing education programs that addressed the problems faced in daily practice. To the extent that these are informational problems, the journals and drug industry literature already serviced those types of needs. In greater need of attention, however, was the pharmacist's ability to competently solve particular situations in daily work. Consequently, any programs developed should relate specifically to the responsibilities and tasks of practice rather than to information and knowledge alone.

Unfortunately, self-perceived needs assessment surveys had not successfully clarified what these kinds of programs would look like.

In one sense, the effort to develop a pharmacy continuing education plan was alive and well in July, 1977. Several groups were excited about the possibilities that existed, and some of the basic concepts needed to develop quality programming had been uncovered. In another sense however, the project had come to a halt. While ideas and interest were evident, they had not been molded into a framework that would lead to action. The next steps simply were not clear. Four problems needed to be resolved before programs could become a reality:

1. clarification of the particular goal to be achieved

2. the basis for determining pharmacists' practice-related needs

3. an organizational form that would produce action

4. the means to assess pharmacists' competency

To address these matters and to get the effort moving again, the several parties that had contributed to a pharmacist professional development plan were invited to attend a two-day "brain-storming" session.

This Pre-Planning Workshop, as it came to be called, was convened at Penn State August 18, 1977. Attending were representatives of Pennsylvania's four pharmacy schools; members of the Williamsport Hospital pharmacy staff; the director of education for APhA; and the vice president for Continuing Education, coordinator of the Coordinating Council for Continuing Education in Health Care Systems, and staff members from Planning Studies in Continuing Education at Penn State.

The Pre-Planning Workshop for the Pennsylvania Pharmacists' Professional Development Program was a success from all accounts. The three major outcomes were the statement of a goal for the pharmacist professional development plan, the identification of a core group of people who would spearhead the effort, and a general outline of how the project would proceed. The goal agreed upon was as follows:

> To develop an organized, accessible, and ongoing program of continuing professional education for all pharmacist practitioners which would enable them to maintain the necessary competencies to fulfill their role optimally.

The organizational device selected to promote action was a multi-constituent task force, or project team. Included were pharmacy faculty, a representative from APhA, a pharmacist from The Williamsport Hospital, and Continuing Education staff members from Penn State. The rationale behind this organizational approach was that each group could make a unique contribution. APhA, with its long term commitment to continuing education to help improve practice, had been doing considerable work in the area of competency. Personnel at The Williamsport Hospital originally initiated the project, were aware generally of area pharmacists' practice needs, and had given substantial consideration to pharmacists' continuing education needs. Because pharmacy school faculty members would eventually develop the actual programs, it was important to have their input from the start. Staff members from Continuing Education at Penn State were included because of their experience in needs assessment and program delivery. In addition, involving all relevant parties from the beginning was believed to be a way to generate the commitment necessary to produce successful programs.

The general project outline developed called for the review of materials that could provide a basis for creating practice-oriented assessment instruments, the construction of the instruments, the holding of a workshop to assess pharmacists' competencies, and the development of programs based on deficiencies identified in the workshop.

With the conclusion of the Pre-Planning Workshop, Phase I of what is now called the Practice Audit Model was completed. A multi-interest group project team (now identified as a profession team) consisting of academics, interested practitioners, professional association representatives, and continuing education professionals had been formed and a firm direction established. The organizational problems were solved.

Preparing for Assessment: Defining Professional Responsibilities

The goal established for the Pennsylvania Pharmacists' Professional Development Program at the Pre-Planning Workshop meant that the project team had to immediately address the competency issue. Given the intent to deliver programs that would help pharmacists improve their practice, some consensus had to be reached concerning the meaning of competency for the practicing pharmacist.

Developing a definition of competency is not an easy task. It requires systematic and empirical identification of the pharmacist's responsibilities, as well as of the tasks he must perform to fulfill those responsibilities. Only then is it possible to set standards of performance; that is to define how the pharmacist must perform the tasks and responsibilities. Fortunately, the project team was not without available resources with which to address this critical issue.

Definitions of competent professional performance can be developed in a variety of ways. A major concern among those currently working in the field of competency assessment is that such definitions not rely solely on prescriptions offered by "experts," but rather rest on a thorough field examination of workers' job activities.

APhA and the American Association of Colleges of Pharmacy (AACP) had been concerned with the competency issue for a number of years, believing that an appropriate definition of competency would allow them to develop better programs for their constituencies. Illustrative of their concerns was the creation of an AACP/APhA task force in 1973 to identify ways "to assist the profession in developing a basic guide for planning and implementing programs to assure that registered and/or licensed pharmacists maintain competence to practice" (Kalman and Schlegel, 1979). After four years of preliminary work these two organizations jointly contracted in April, 1977, with the Educational Testing Service (ETS) to conduct a national study of the practice of pharmacy—in other words, a job analysis/role delineation study.

With the concurrence and support of the contracting agencies, ETS wanted to do a study that avoided the errors of previous job analyses which either relied entirely on experts or used a limited sample of practitioners from whom to obtain descriptive information about their work. Consequently, it employed a detailed methodology involving the following stages:

1. review of the pertinent literature on the practice of pharmacy

2. field interviews with a small sample of pharmacists

3. construction of a preliminary inventory of pharmacists' responsibilities

4. review of the inventory by two separate technical advisory committees

5. review of the inventory by a small sample of pharmacists

6. development of a final inventory

7. pilot test of the inventory

8. distribution of the inventory to a nationwide, stratified sample of practitioners

The final inventory consisted of seventy-one responsibilities organized into seven major categories. The 5,000 pharmacists to whom it was sent were asked to rate each responsibility with regard to time spent, importance, and level of judgment required (Rosenfeld and Thornton, 1978).

An analysis of pharmacists' responses to the survey provided some interesting findings. For example, all seventy-one responsibilities listed were judged to be important in practice, and there was considerable consistency across the country with regard to how pharmacists spend their time. It was also found that the responsibilities could be divided into four rather than seven major categories: general management and administration, activities related to processing the prescription, patient care functions, and education of health care professionals and patients.

At the time the project team was organized for the Pennsylvania Pharmacists' Professional Development Program, the ETS study was not

entirely finished. Actual standards of practice were yet to be developed. However, because of the broader and important implications that the development of the Pennsylvania Pharmacists' Professional Development Program held for providing a national model, APhA offered to share the preliminary findings of the ETS work with the project team. The available ETS information provided a sound basis for understanding more clearly what pharmacists do in practice. As a result, Phase II of the Practice Audit Model, the identification of professional responsibilities, essentially was complete. Ideally, of course, it would have been best if performance criteria were available as well. However, the project team believed that the ETS study provided enough information and adequate guidelines about pharmacists' functions to allow it to begin work on practice-related assessment instruments. This meant that the project team had to make some important judgments about what competence meant with regard to specific practices. To do so, the team used the empirically derived information about pharmacists' actual job roles. This was the critical step in the effort to develop practice-oriented continuing education programs which could assist pharmacists in their efforts to remain competent.

Designing Assessment Tools

The Pre-Planning Conference established the orientation for the Pennsylvania Pharmacists' Professional Development Program. At the same time, many basic questions related to how the project should proceed remained unanswered. The first ones demanding attention were the who, what, and how of competence assessment. Project team members realized that a pharmacy practice orientation had to influence the responses to

these questions. However, the details of how that would occur still had to be determined. To work out these details, the team met in early October, 1977, for a two-day workshop. As stated in the agenda, the workshop goal was:

> To develop instruments and processes to enable practicing pharmacists to indicate their practice-based educational needs in an interactive setting with pharmacy educators.

The first issue addressed at the workshop was the appropriate content for assessment. The primary consideration was that there be an explicit relationship between what was assessed and what pharmacists do, thereby avoiding the orientation of some previous needs assessments which identified only deficiencies in the pharmacists' ability to retrieve knowledge and information. There were resources available to assist the project team in this endeavor. As noted earlier, the ETS study had identified seventy-one different responsibilities of pharmacists, clustered into four major categories:

general management and administration of pharmacy

activities related to processing the prescription

patient care functions

education of health care professionals and patients

After considerable discussion about the ETS framework, project team members agreed that it provided the basis for the content of assessment even though there would be no attempt to tie specific content items to specific responsibilities listed in the "responsibilities inventory."

As a result, the team selected five content areas for assessment that were related to the pharmacist's functions identified by ETS: pharmacy administration and management, prescription processing functions, patient care matters taking into consideration several disease states, the fitting and uses of surgical apppliances, and communication skills necessary to adequately inform other health professionals and patients about drug related matters. In addition, the project team decided to query pharmacists to learn their preferences in modes of continuing education delivery, days and times for continuing education programs, and learning sites.

Identifying content areas that would address practice-related issues represented only one part of the process of developing relevant assessment instruments. Selecting appropriate assessment techniques was also important. Project team members agreed that to use only multiple choice questions would not be adequate since the aim was to gain an understanding of how pharmacists performed in practice. As a consequence, an "assessment center" approach was chosen (Howard, 1974; Slevin, 1972). This method utilizes several assessment techniques, most of which force participants to find solutions to problems instead of simply selecting responses from a limited set of options. Among the techniques chosen were the following:

> a surgical appliance exercise requiring pharmacists to show how they would demonstrate the use of various devices to patients
>
> practice situation questions asking for a response to a given set of circumstances
>
> fifteen- to twenty-minute interviews covering communication skills, pharmacy management, and the

psychosocial aspect of pharmacist/patient interrelations

a case study permitting the pharmacist to reveal the steps he would follow in dispensing two prescriptions to a particular patient

an errors and ommissions exercise asking for an identification of the problems with several prepared prescriptions

a series of questions dealing only with knowledge and information

Assessment content areas and techniques were the primary items addressed by the workshop participants, but a number of other matters were resolved as well. One, the logistics of the assessment or audit process itself, will be discussed shortly. Another was the question of whom to assess; project team members' ideas about this were formalized at the session. Their primary concerns were that (1) a representative sample of pharmacists be selected so that the identified deficiencies could be generalized to pharmacists throughout the State, (2) it be small enough to allow for intensive assessment, (3) the audit process be approached as an assessment procedure rather than as an evaluative one to alleviate any fears potential participants might have, and (4) the results of the assessment not be publicized because of the possible sensitivity of the data.

Finally, responsibility for the various assessment instruments was assigned. Major portions of the assessment tools had been developed, but they were not finished. Project team members outlined the task yet to be done, and brought in one person from each of the four pharmacy schools to work with them. Each of the four individuals represented an

area of expertise which had been identified to be covered in the audit. It was this group that developed the assessment materials and rating scale, and then conducted the assessment interviews.

The assessment materials workshop allowed project team members to resolve a number of critical issues. Questions regarding what would be assessed, how it would be assessed, and who would be assessed had been answered. Significantly, the answers chosen were focused on ensuring that the various ingredients of the assessment process would be rooted in a practice orientation, i.e., would be able to identify deficiencies that could inhibit satisfactory job performance. It is true that some work remained to be done on the assessment instruments, but project team members agreed to submit the materials for review before they would be used to assess pharmacists. With the conclusion of the workshop, what is now Phase III of the Practice Audit Model--construction of assessment materials--essentially was complete.

The Assessment Process

The goal established for the Pennsylvania Pharmacists' Professional Development Program, as noted earlier, was to develop a two- to three-year integrated series of practice-oriented education programs that would assist pharmacists statewide in maintaining their competence. Participants in the Pre-Planning Conference, as well as project team members, agreed that the best way to achieve this goal was to intensively assess a small group of pharmacists to identify deficiencies in practice. The problem areas uncovered in this assessment process would provide information needed to develop meaningful programs because such programs could be tailored to pharmacists' real performance needs.

Before the assessment process could begin, however, the pharmacists who would be assessed had to be identified.

It was important for the achievement of the project's goal that the results of the assessment process be applicable to more pharmacists than the ones actually assessed. To ensure that this was possible, the Pennsylvania Pharmacist Association (PPA) was asked to provide a list of a representative sample of practicing pharmacists. The value of the project's collaborative nature was evident in this step since PPA's involvement ensured that the most up-to-date and complete information on pharmacists in the State was available to the project team. PPA responded by providing a stratified sample of pharmacists, selected on the basis of the following variables: degree attainment; type of practice (chain, hospital, or community pharmacy); age; sex; urban or rural practice setting; geographical location; and years out of school. The identified pharmacists were then sent letters of invitation asking them to attend an assessment workshop. To encourage participation, they were informed of the project's purpose, the fact that the workshop had been designed so that they would have to be away from their work for only one day, and Smith Kline & French Laboratories' agreement to pay for their participation by covering travel and lodging expenses. Thirty-eight of the forty pharmacists contacted agreed to participate.

The assessment workshops were held November 9 through 11, 1977. Given the nature of the assessment instruments and the desire not to keep any pharmacist more than one day, the project team divided the participants into two groups of nineteen with each group attending from noon on one day until noon the next. When the first group arrived November 9, an orientation session was held to inform participants of

the events that would occur during the next twenty-four hours. The purpose of the workshop was discussed, the notion that it was to be an assessment process where no one would pass or fail was stressed, and its format was described. All pharmacists were informed that they would be given a written assessment exercise booklet to be completed at their own pace. While working on this, they would be called out individually to participate in the various assessment interviews and exercises. With the end of the orientation, the actual assessment process began.

The assessment workshop was divided into three segments: afternoon, evening, and the following morning. During this time, participating pharmacists were asked to complete six different exercises covering the five content areas chosen for assessment. Procedures used for the process were quite simple and designed to give participants a periodic break from the single most time consuming exercise. Initially, all were seated in a central conference room and asked to begin work on a seventy-six question workbook which concluded with a case study. The material in the workbook covered numerous disease states including congestive heart failure, hypertension, asthma, and thyroid disorders, and appropriate drug therapies. While working on this, the participants were called out on an individual, rotating basis to participate in five other assessment processes lasting from twenty to thirty minutes and conducted by pharmacy faculty members. These five processes were:

1. a pharmacy management interview which covered legal, personnel, inventory, and fiscal matters.

2. a surgical and health accessories exercise which required participants to demonstrate how they would fit or show patients how to use various devices such as a walker, a hot water bottle, a cane, and a hypodermic syringe.

3. a communications interview designed to determine how the pharmacist would handle certain pharmacist/patient and pharmacist/physician interactions. In addition, information was obtained about the pharmacist's understanding of certain psychological and social science concepts related to communications.

4. an exercise on prescription processing which required the participants to identify the errors and omissions in a set of prepared prescriptions. For example, each was asked to determine the appropriateness of the drug dispensed, the containers, the directions on the prescription, and the auxillary labels.

5. a professional practice interview where pharmacists were asked to respond to certain practice situations. For example, one question stated, "A twelve year old asthmatic girl on Metaprel Suspension has a new prescription for cromolynsodium which is brought to your pharmacy for dispensing. What instructions would you give concerning its use?"

The atmosphere created for the assessment workshop was informal and free of pressure. The small number of pharmacists participating in each session resulted in no real time constraints. The use of identification numbers rather than names during the process alleviated any fears among the participants that they would be individually judged and reinforced the idea that they were participating in an educational needs identification exercise. Finally, the opportunity for project team members to interact with the pharmacists in a relaxed setting during meals and a social hour allowed them to acquire an understanding of practitioners' concerns with regard to continuing education and their profession.

Both sessions of the assessment workshop ran smoothly. Two small groups of practicing pharmacists had been assessed on content areas

directly related to their daily professional practice. When the second group of pharmacists finished their exercises on November 11, and left Harrisburg, what is now Phase IV of the Practice Audit Model--conduct assessment workshop--was complete.

Results of the Assessment Workshop

Project team members left the Harrisburg assessment workshop with the feeling of a job well done. Clearly, the pharmacists professional development plan was progressing steadily. Also encouraging was the additional support being offered. For example, the Executive Council of the Pennsylvania Pharmaceutical Association unanimously passed a motion at its December, 1977, meeting stating that its members

> ....encourage and support the four schools of pharmacy in Pennsylvania, The Pennsylvania State University, the American Pharmaceutical Association, and the Pennsylvania State Board of Pharmacy in the production of the "Pennsylvania Pharmacists' Professional Development Program" as an ongoing effort to maintain the competence of our pharmacists and for the patients which (sic) they serve.

Buoyed by the recent developments, project team members proceeded with the tabulation and evaluation of the assessment workshop results. Those responsible for each exercise agreed to compile and summarize the data they obtained from participants. When completed, this information was to be sent to two project team members who would produce a final report with recommendations. This document, which was to be sent to the four pharmacy school deans, would serve as the foundation for the long term development of continuing education programs for pharmacists.

The results of each assessment exercise were available by the end of February, 1978. The subsequent analysis of this information provided

some useful insights into pharmacists' professional practices. It was clear that participants performed well on those aspects of the exercises related to the traditional, passive pharmacist role of drug dispenser. Thus their answers to the workbook questions revealed a sound understanding of those drug products frequently dispensed and their best performance was on the "errors and ommissions" exercise, the one most closely related to prescription processing. In addition, pharmacists performed reasonably well on the exercise asking them to demonstrate the use of several surgical appliances and health accessories.

Those areas in which the participants performed least well were directly related to tasks and responsibilities pharmacists needed to assume if they were to become members of action oriented health care teams. As noted earlier, these emerging responsibilities required the pharmacist to provide consultative services to physicians regarding appropriate drug therapies for certain disease states and to advise patients about drug products. In terms of the assessment results, problems in this area were indicated by simulated performance on several points. First, pharmacists' answers to a number of the workbook problems and their responses in the professional practice interview revealed a limited understanding of the symptoms, drug treatment, and drug regimen of chronic disease states (e.g., pulmonary disease). Second, the participants' performance indicated that their understanding of drug products did not extend to such factors as mechanisms of action, adverse effects, or basic information about drugs which should be conveyed to patients. Third, the assessment results suggested that participants were not adept at using basic pharmacy reference texts. Fourth, their performance in the communications interview demonstrated a

limited ability to effectively communicate with patients suffering from certain chronic diseases and in certain practice situations (e.g., an irate customer). Fifth, the responses to several of the situational and case study questions pointed out that pharmacists needed to improve their problem solving skills and become more adept at recognizing practice situations calling for their professional intervention.

The evaluation of the assessment workshop results was completed by March, 1978, and what is now called Phase V of the Practice Audit Model was finished. All who participated in the project to this point agreed that the results were indeed enlightening and that several deficiencies in performance were evident. The next project stage, as indicated in the project plan developed the previous September, provided for the development of continuing education programs that addressed the problem areas identified. Now that this information was available, the development of the practice-oriented continuing education programs seemed within reach.

Program Development

Program development, as the project team soon learned, would not be an easy task. The many months and indeed years of effort that had contributed to the project's establishment, to the development of assessment instruments, to the holding of the assessment workshop, and to the evaluation of its results represented a time consuming and arduous process. The completion of the various steps had led to an enormous sense of accomplishment. However, the realization of what was yet to be done contributed at least in part to a decrease in the project's momentum.

The loss of momentum was reflected in activities over the next seven months. Three major attempts were made to initiate the program development process, including a one-day planning session attended by project team members in March, the preparation in June of a major document outlining project accomplishments to date and potential future directions, and a second program planning session held at the end of September. Significantly, no one segment of the project team was responsible for these attempts. PPA, the representative from APhA, Williamsport Hospital personnel, and Penn State's Continuing Education staff members all tried at various times to revitalize the project. Although no one attempt served as the sole catalyst, each provided an opportunity for team members and others to think about and discuss what was to be done and the direction it should take. Finally, a program planning session was held on November 17, 1978, that utilized ideas from the previous nine months of discussion to establish a plan of action for program development. The various segments of the final plan, as well as their development after the November meeting, are discussed in detail below.

The first issue to be agreed upon was the identification of an appropriate program topic. One primary reason for holding the assessment workshop, of course, was the desire to systematically identify pharmacists' practice-related needs which could then be addressed by continuing education programs. An analysis of the workshop results indicated that the assessment process had served this purpose well. Among the several problem areas uncovered were pharmacists' knowledge, skills, and understanding with regard to drug product selection, pulmonary disease, and endocrinology. Determining which area

should be addressed first rested on reaching an agreement about which problem seemed most important. Given that the Pennsylvania legislature had recently passed a series of laws dealing with drug product selection, a subject which the assessment results had indicated was in need of attention, the project team selected it as the first program topic.

The idea that continuing professional education, to be most effective, should be delivered in a coherent series rather than as unrelated lectures was a significant element in The Williamsport Hospital staff's original effort to develop a new approach to continuing education. The project team had supported this rationale all along. Therefore, it was decided that the program format should also provide for continuity. To do this, the "Drug Product Selection" program was divided into four segments, with each successive part intended to expand on previously presented material. This integrated approach was conveyed well by one of the project team members in his description of how the first program would be delivered.

> Briefly, segment one will provide an orientation to the subject matter by discussing the historical aspects of pharmacists in the selection of drug products, drug formulation and its relation to effectiveness, and state laws. Segment two will concern the bioavailability of drug products along with workshop activities. Program three will go into greater detail about the full scope of the pharmacist's responsibility along with cases which will explore various parameters, e.g. legal responsibility, patient safety. Segment four will bring it all together and emphasize decision-making by the pharmacist based on supporting data and professional judgment (Kalman, 1978).

Ultimately, the selected segment topics were "Legal Aspects of Drug Product Selection," "How Drug Product Performance is Measured," "Factors

Influencing the Bioavailability of Drug Products," and "Case Studies in Drug Product Selection." Although these topics were somewhat altered from the ones noted earlier, the notion of integration was retained and utilized.

Selection of the program topic and identification of the appropriate format had been crucial steps, but the actual programs still had to be developed. It was assumed from the beginning that pharmacy faculty would be responsible for this. To ensure that the project team's philosophies were incorporated into each segment, however, specific procedures were followed in the development of each. Initially, two project team members constructed a general outline for each program segment, identifying relevant issues and objectives. This document was forwarded to each pharmacy school where a selected faculty member chose one segment to address. To assist him in his work, each participating faculty member received a copy of the assessment workshop instruments and results relevant to his chosen topic. The program segments were then developed over a five month period by the faculty members. Upon completion, each segment was reviewed by a project team member to ensure that the presentations adhered to the chosen topics and represented a cohesive approach to the problem of "Drug Product Selection."

The instructional techniques and delivery mechanism chosen were selected because of their perceived usefulness in facilitating the achievement of certain project objectives. One such objective was the desire to avoid some educators' predilection to "preach" to professionals enrolled in continuing education courses. Consequently, the program was structured so that a thirty to forty-five minute

question and answer/discussion session would follow a forty-five minute formal presentation by the faculty member. In addition, all program participants would be sent a substantial amount of reading material prior to each segment. This material would stimulate thought and raise questions that could be addressed during the discussion session, as well as provide a common base of understanding among pharmacists whose educational degree attainments were quite varied. Another objective was to closely relate the program to situations faced by pharmacists in their practice. The problem solving approach was deemed useful for this purpose, so case study materials were included in the prepared readings as well as in some of the program presentations. Finally, the project team was determined to reach pharmacists throughout the State. The availability of Penn State's Continuing Education telephone tie-line system, which allows for the simultaneous delivery of a live presentation to numerous locations, made this possible. Besides being economical, this delivery mechanism permits participants to ask questions and receive immediate feedback from the program presenter, with both questions and answers heard at all locations.

The project team had no illusions that signficiant numbers of pharmacists would enroll in the four-part program without an extensive promotional campaign. Access to the resources and expertise of PPA and Penn State's Continuing Education staff made such a campaign possible. Through their combined efforts, two separate news releases were sent to every daily newspaper in the State, flyers were mailed to every registered pharmacist, announcements were placed in the PPA journal, brochures were mailed to all pharmacies listed in the State's telephone book yellow pages, and a short presentation was made to those attending

PPA's 1978 summer meeting.

Each segment of the "Drug Product Selection" program was developed and all promotional literature distributed by August, 1978. The completion of these tasks brought to an end what is now call Phase VI of the Practice Audit Model--design and planning of continuing professional education programs. The effort had consumed nearly eighteen months, but the final product was faithful to the ideas and concepts that had originally inspired the Pennsylvania Pharmacists' Professional Development Program. All that remained was the actual delivery of the program to pharmacists.

Implementation

The four years of cooperative effort involved in the Pennsylvania Pharmacists' Professional Development Program culminated in the implementation of the first program, "Drug Product Selection," in Fall, 1979. The promotional literature distributed the previous summer resulted in the registration of 304 pharmacists at thirty-eight locations throughout the state. The previously developed program format was followed precisely. The first topical presentation was made on September 26, and the remaining three segments were offered in October, November, and December. Fortunately, no major problems were encountered with the exception of a minor malfunction in the telephone tie-line communication system during one session. A comparison of pre- and post-program test results indicated considerable improvement in pharmacist performance in the area of drug product selection. In addition, participant evaluations of the program revealed a positive assessment of the total effort. From all accounts, the initial program was a success.

Project team members approached program implementation with the understanding that it should be an evolutionary process. That is, the development of each program should build on insights gained from the previous one. Modifications could be incorporated into each new program to produce a higher quality product. With this in mind, the project team convened in February, 1980, to develop the second program. While all agreed that the first was successful, they believed that improvements could be made. A review of the first program's evaluations indicated that two changes seemed particularly important. One was an alteration in the program delivery format so that the entire four-part series could be presented in one month. This was done to address the criticism that four weeks between segments detracted from program continuity. The other was a shift to the case study format for all four segments of the program. As noted, the last segment of the first year's program dealt exclusively with case studies and had been received extremely well by the participating pharmacists. Given that this approach confronted pharmacists with problems likely to be encountered in daily practice, it was felt that this approach would further the effort to keep educational programs as practice-oriented as possible. Having agreed on these changes, the project team selected "The Pharmacist's Role in Pulmonary Disease" as the second program's subject. The rationale for this selection was that respiratory disease was discovered to be the area of pharmacist's greatest educational need at the assessment workshop. Also, many new advances in the treatment of respiratory disease had been introduced into the field recently.

The development of the second program essentially followed the procedures used for the first program. A faculty member at each

pharmacy school agreed to organize one portion of the four-part series using the case study format. Although these faculty members assumed primary responsibility for their segments, a project team member reviewed their presentations prior to program implementation to ensure the continuity of the four-parts as well as their focus on practice situations. Relevant reading material was prepared once again for distribution to participants before each session. And finally, promotional items such as news releases, brochures, and flyers were distributed statewide.

The "Pharmacist's Role in Pulmonary Disease" program held in October, 1980, attracted 176 pharmacists to twenty-three different locations. The exclusive use of the case study approach dictated a specific form of delivery. In particular, participants at each location first met for forty-five minutes to discuss a case study and to agree on appropriate responses to several prepared questions. This activity was led by a pharmacist coordinator who was advised of the key concepts and issues the group should address. At the conclusion of the group discussion, the telephone tie-line system was activated simultaneously at all locations, allowing the faculty member to deliver a formal presentation on the case study and to answer questions.

The evaluations of the second program currently are being analyzed. The expectation is that these results will be used in the development of future continuing professional education programs for pharmacists. For the purpose of the pharmacist professional development plan, what is now called Phase VII of the Practice Audit Model--program implementation--will be an ongoing process.

Summary of the Practice Audit Model

The implementation of the two pharmacy continuing professional education programs culminated the long-term efforts of a substantial group of people. The project did not start with a model that delineated a clear plan of action. Rather, its initiators began primarily with an idea of what they wanted to achieve--the delivery of integrated continuing education programs which addressed pharmacists' practice-related needs. As interest in the project grew and additional parties were contacted for their expertise, new ideas continually were introduced, making the effort much more complex than was originally conceived. Certainly, the whole process was far from being problem free. The project team was exploring new territory, which meant that wrong turns and dead ends were not unknown. Each failure contributed to a better understanding of what was needed, however, and so the project advanced in an evolutionary way. It was only when program implementation was near that project team members looked back at the steps they had taken and realized that their work really represented a systematic way to develop practice-oriented continuing professional education programs. When those efforts were abstracted and conceptualized, the result was the Practice Audit Model.

It is now possible to summarize the seven-phase Practice Audit Model. Phase I provides for the organization of a profession team that will guide the development of continuing education programs for the particular profession under consideration. It is comprised of faculty members, professional association representatives, continuing education professionals, and other relevant parties such as consultants and practitioners. The rationale for this multi-constituent collaborative

body is that each group has unique skills and perspectives that can be better used cooperatively than separately in the development of continuing education programs. For example, faculty members assume primary responsibility for program development, the professional association representatives move the project in the direction of identifying professionals' practice-related needs, continuing education professionals coordinate much of the effort and make the program delivery mechanism available, and practitioners ensure that focus on the professional in day-to-day activity is not lost. In addition, it is important to note that each of the segments provides the necessary energy at various times to ensure that the project keeps moving forward. Given the length of time this systematic approach takes, structuring an organizational context that forces no one group to assume the complete burden of providing impetus to the effort may be one of the keys to success.

Phase II calls for the identification of practice standards or professional competencies. The purpose of developing practice-oriented continuing education programs is to assist professionals in their attempt to remain competent practitioners. To do this, it is essential to acquire an understanding of what professionals do in their positions and what they must do to perform competently. Without this, the development of truly practice-related programs becomes a guessing game. Significant advances in the methods and techniques used to systematically define the scope of professions and occupations have been made in the last twenty years. The improvements in such devices as job analysis, role delineation, and job competence assessment mean that subjective attempts to define professions and occupations are

increasingly subjected to criticism. Phase II thus demands that formal and systematic methods be utilized, or at least consulted, in the identification of practice standards or professional competencies.

The construction of assessment materials occurs in Phase III of the Practice Audit Model. All educational programs are based on some form of the needs assessment process, although the degree to which it is formalized and its quality vary considerably. In order to develop assessment instruments that will adequately identify the practice-related educational needs of professionals, primary consideration must be given to two matters. One is the content of assessment; the topics to be assessed must be specifically derived or related to the nature of the professional's work as outlined by the practice standards or professional competencies identified in Phase II. The other pertains to assessment techniques and procedures; the crucial issue here is that the assessment methods must allow participants to demonstrate how they perform in practice situations. Assessments that only test knowledge are inappropriate because competent performance cannot necessarily be inferred from a demonstration of adequate knowledge alone.

Professionals' ability to perform their defined tasks and roles satisfactorily is assessed in Phase IV, the assessment workshop. This step involves using the assessment methods developed in Phase III. Selection of practitioners to be assessed depends upon the population to which the results will be generalized and the objective of the assessment process. A small, stratified sample intensively assessed is the logical selection when the goal is to develop a series of programs that would be relevant to practitioners statewide. A goal of delivery of individualized educational programs for professionals would

necessitate individual assessments.

Phase V provides for the analysis of the assessment results. The purpose of this phase is to specifically identify practice-related educational needs by comparing a professional's performance in the assessment process to the standards established for competent performance. Any discrepancy between standards and performance represents a deficiency or need that should be attended to by continuing education programming.

The planning and development of continuing professional education programs occurs in Phase VI. A number of important issues must be addressed in this phase, including program content, format, instructors, appropriate instructional techniques, delivery mechanisms, and program promotional materials. Importantly, the decisions regarding these issues must be logical outgrowths of preceding phases and the overall practice orientation. For example, program content should be derived at least in large part from the assessment results, and instructional techniques selected should facilitate the application of program content to the professional's work site.

Phase VII, the final phase, involves implementing and evaluating the programs developed in Phase VI. A major concern is that the experiences gained in the delivery of each program be used to modify and improve each succeeding program. Evaluation of program effectiveness is also an important element of this phase. Ideally, the evaluation should attempt to discover whether programs contribute to the improvement of professional's practice behavior, for that is the primary purpose of continuing professional education programs.

The Practice Audit Model is a systematic approach to the assessment

of professionals practice-related educational needs and the development of programs that address the identified problem areas. Its ultimate objective is to assist professionals in their attempt to remain competent practitioners through a collaborative effort that utilizes the particular expertise of educators, professional association representatives, and continuing education professionals. The experience gained in the pharmacy project suggests that the model can be a useful device for continuing professional education. Its applicability to other professions remains to be determined, however.

Conclusions and Future Directions

The Practice Audit Model was developed as a framework to assess the continuing education needs of professional practitioners and to develop programs based on these needs. It is unique for several reasons.

1. The impetus for its dev lopment grew out of a consortium of continuing professional education providers.

2. It brings together the resources of professional school administrators, academic content experts, practitioners, and professional association leaders, maintaining this operating team from the earliest planning stages through the development and execution of educational programs.

3. The model provides a systematic method of addressing the needs assessment/program development process.

4. The process involves faculty and practitioners in structured, face-to-face situations that provide for critical analyses of practitioners' performance.

5. The program provides for repetition of the process in a three- to four-year cycle, thus giving continuity to lifelong learning.

The experience gained from the Pennsylvania Pharmacists' Professional Development Program suggests that the Practice Audit Model is a potentially useful process for continuing professional education needs assessment and program development. However, it is not without problems which, while surmountable, should be recognized and addressed.

Inherent in a competency-based needs assessment process are a number of technical problems, as varied as the areas being assessed. To

a degree, these problems will always be a part of competency assessment, to be dealt with individually as means of assessing specifically defined areas are sought. However, such issues as the validity and reliability of assessment instruments are fundamental problems that will have to be solved as the relatively new field of competency assessment continues to develop.

The translation of assessment results into educational programs is also difficult. In the Pennsylvania Pharmacists' Professional Development Program, this became a twofold problem: the task itself was a demanding one, and, after an extended period of intense effort on the project, team members individually and collectively slackened their pace so that activity declined. The difficulty of the task itself occurs, at least in part, because of the need to precisely identify practitioners' areas of deficiency, while at the same time keeping the identity sufficiently broad to allow for the development of meaningful programs. The problem of decreased energy that appeared to have occurred at this stage in the work with the pharmacists may be more one of timing; if so, the possibility is that it can be addressed as such. (Further experience with the Practice Audit Model may show that the problem of diminished energy is not necessarily related to this stage of the model.)

The interpersonal, interorganizational, and political problems of collaboration may occur at any point through the seven phases of the Practice Audit Model. While no major problems of this nature arose in the conduct of the Pennsylvania Pharmacists' Professional Development Program, there is a need to strive to prevent them and to be prepared to handle them if they should arise. A strong understanding of the nature

of collaboration, and the forces at play in a collaborative arrangement, could allow for this relationship to be established in the optimum manner, within a framework that minimizes the opportunity for such problems to occur.

Perhaps most importantly, the applicability of the Practice Audit Model to other professions is yet to be proven. It was recognized that examination of the Practice Audit Model's applicability to other professions would involve a project requiring significant resources, an extended time period, and a substantial commitment of institutional support. At The Pennsylvania State University, steps to secure the necessary resources and commitment were begun in 1978, and culminated with the initiation on July 1, 1980, of a five-year Continuing Professional Education Development Project funded jointly by the W. K. Kellogg Foundation and the University. The project has three broad goals.

1. To establish collaborative relationship between the University and the professions in order to strengthen the development and implementation of continuing professional education programs.

2. To develop and implement practice-oriented continuing professional education programs through the application of the Practice Audit Model to six selected professions.

3. To develop models of the University/profession collaborative relationship for continuing professional education which can lead to its institutionalization.

Although these goals stress the collaborative development of continuing education programs for practitioners, they and the overall project will provide the context for examining the generalizability of

the Practice Audit Model. During the course of the project, the basic model, as described earlier, will be adapted to six different professions. Thus, the needs assessment/program development effort, which began with the pharmacy profession and subsequently led to the Practice Audit Model will be continued over the next five years. The question of the model's applicability to other professions, as well as other issues relating to the premises of the Practice Audit Model and the concept of University/profession collaboration, will be examined and the results of these analyses will be disseminated through working papers, conferences, and publications.

Appendix A

Below is an alphabetical list of everyone who contributed to the development of the Practice Audit Model from 1972-1980. The titles and positions given for these individuals are those they held when they were involved in the project; changes have occurred since then. The valuable contribution of the thirty-eight pharmacists who participated in the assessment workshop must be recognized. They are not listed below, however, because of the agreement that the names of participants in the assessment workshop would remain confidential.

Names

Anthony J. Amadio, Director of Continuing Education, Duquesne University.

Theodore Anderer, Chairman, Committee on Continuing Education, Pennsylvania Pharmaceutical Association.

Joseph A. Bianculli, Dean, School of Pharmacy, University of Pittsburgh.

Alexander D. Black, Coordinator, Coordinating Council for Continuing Education in Health Care Systems, The Pennsylvania State University.

Lawrence Block, Professor of Pharmaceutics, School of Pharmacy, Duquesne University.

Robert Brim, Chairman, Continuing Education Committee, Pennsylvania Pharmacists Association.

Earl Collins, Pharmacist, Tyrone, Pennsylvania.

John D. Connor, Department of Pharmacology, Hershey Medical Center, The Pennsylvania State University.

Joseph Daly, Pharmacist, Reading, Pennsylvania.

Neil Davis, Professor of Pharmacy, Temple University.

C. D. Ditchfield, Pharmacy Director, The Williamsport Hospital.

Lewis Dittert, Dean, School of Pharmacy, University of Pittsburgh.

Balwant Dixit, Dean, School of Pharmacy, Univeristy of Pittsburgh.

Theresa Dowling, Coordinator of Continuing Education, School of Pharmacy, Temple University.

George Downs, Associate Professor of Clinical Pharmacy, Philadelphia College of Pharmacy and Science.

Richard Englehart, Pharmacist, Camp Hill, Pennsylvania.

Joseph L. Fink, III, Assistant Professor of Pharmacy Administration, Philadelphia College of Pharmacy and Science.

Floyd B. Fischer, Vice President for Continuing Education, The Pennsylvania State University.

Herbert Flack, Director of Continuing Education, Philadelphia College of Pharmacy and Science.

John Gans, Chairman, Continuing Education Committee, Pennsylvania Society of Hospital Pharmacists.

Gloria Garbin, Assistant Director of Pharmacy Services, Presbyterian University Hospital, Pittsburgh, Pennsylvania.

Philip Gerbino, Associate Professor of Clinical Pharmacy, Philadelphia College of Pharmacy and Science.

Frederick Goldstein, Philadelphia College of Pharmacy and Science.

Donna Hummel, Staff Specialist, Planning Studies in Continuing Education, The Pennsylvania State University.

Daniel A. Hussar, Dean of Faculty, Philadelphia College of Pharmacy and Science.

Michael Jacobs, Assistant Professor of Clinical Pharmacy, School of Pharmacy, Temple University.

Samuel H. Kalman, Director of Education, American Pharmaceutical Association.

David King, Pharmacist, Mercer, Pennsylvania.

James Kirkwood, Pharmacist, Harrisburg, Pennsylvania.

Robert Kunka, Assistant Professor of Pharmaceutics, School of Pharmacy, University of Pittsburgh.

John Laminski, Pennsylvania Pharmaceutical Association.

Carl A. Lindsay, Head, Planning Studies in Continuing Education, The Pennsylvania State University.

Robert Marles, Continuing Education, Temple University.

Bruce D. Martin, Dean, Duquesne University School of Pharmacy.

Joseph McEvilla, Dean, School of Pharmacy, Temple University.

Charles Peterson, Professor of Pharmacy, School of Pharmacy, Temple University.

Robert G. Pietrusko, Assistant Director of Pharmacy for Education and Information, The Williamsport Hospital.

Gene Riley, Professor and Chairman, Pharmacology and Toxicology, School of Pharmacy, Duquesne University.

David Ross, Director of Health Care Planning and Development, The Williamsport Hospital.

Gloria R. Sabatini, Director of Pharmacy Affairs and Health Programs, Smith Kline & French Laboratories, Washington, D.C.

Terry Schwinghammer, Assistant Professor of Pharmacy Practice, School of Pharmacy, University of Pittsburgh.

John Seaman, Assistant Professor Pharmacy, School of Pharmacy, University of Pittsburgh.

Anthony J. Silvagni, Director of Pharmacy Education, Lake Area Health Education Center.

Stanley Singer, Executive Director, Pennsylvania Pharmaceutical Association.

Joseph Smith, President, Pennsylvania Hospital Pharmacist Association.

Joseph Stelzer, Coordinator of Continuing Education, School of Pharmacy, University of Pittsburgh.

Joseph Stern, Chairman, Pennsylvania State Board of Pharmacy.

Richard Swavely, Assistant Director for Continuing Education, The Pennsylvania State University.

John Tighe, III, Pharmacist, Dunmore, Pennsylvania.

Roger W. Turnau, Director, Northcentral Pennsylvania Health Education System.

Helen B. Warren, Staff Assistant, Planning Studies in Continuing Education, The Pennsylvania State University.

Paul Zanowiak, Professor of Pharmaceutics, Temple University.

James Zimmerman, Professor of Pharmaceutics, Temple University.

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